



IN THE  
UNITED STATES  
PATENT AND TRADEMARK  
OFFICE

Application Number	09/840,125
Filing Date	24 April 2001
First Named Inventor	Igor SPLAVIN
Group Art Unit	1655
Examiner Name	
Attorney Docket No.	2323-158

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Title of the Invention: **ALTERATIONS IN THE LONG QT SYNDROME GENES KVLQT1 AND SCN5A AND METHODS FOR DETECTING SAME**

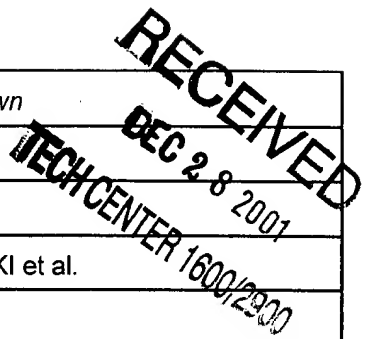
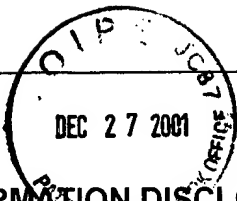
INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

The material listed on the accompanying Information Disclosure Statement by Applicant form is cited in compliance with the provisions of 37 C.F.R. §§ 1.56, 1.97 and 1.98. Applicant respectfully requests that the Examiner consider these references with respect to the present application. Copies of these references can be found with the parent application, U.S. Serial Number 09/634,920, and, accordingly, will not be resubmitted unless requested by the Examiner.

RESPECTFULLY SUBMITTED,					
NAME AND REG. NUMBER	Jeffrey L. Ihnen, Reg. No. 28,957				
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**U.S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code (if known)		
		5,599,673		Keating et al.	02/04/1997

**FOREIGN PATENT DOCUMENTS**

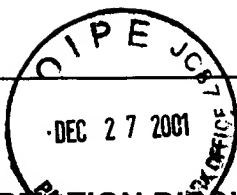
Examiner Initials*	Cite No.	Foreign Patent Document			Name of Patentee of Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	T <sup>6</sup>
		Office	Number	Kind Code (if known)			
		WO	97/23598		University of Utah Research Foundation	07/03/1997	

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## OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

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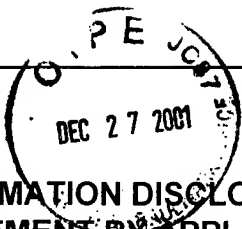
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		ROSEN, M.R. "Long QT Syndrome Patients with Gene Mutations", <i>Circulation</i> , Dec. 15, 1995; 92(12):3373-3375	
		RUSSELL, M.W. "KVLQT1 mutations in three families with familial or sporadic long QT syndrome", <i>Human Molecular Genetics</i> , 1996; 5(9):1319-1324	
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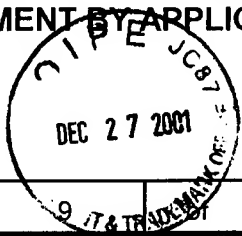
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		TANAKA, T. et al. "Four Novel KVLQT1 and Four Novel HERG Mutations in Familial Long-QT Syndrome", <i>Circulation</i> , 1997; 95:565-567	
		TOWBIN, J.A. et al. "Evidence of Genetic Heterogeneity in Romano-Ward Long QT Syndrome", <i>Circulation</i> , 1994; 90:2635-2644	
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		TYSON, J. et al. "Splice Mutations In KVLQT1?", <i>Circulation</i> , 1999; 99(18):2476-2477	
		VAN DEN BERG, M.H. et al. "The long QT syndrome: a novel missense mutation in the S6 region of the KVLQT1 gene", <i>Hum. Genet.</i> , 1997; 100:356-361	
		VINCENT, G.M. "The Molecular Genetics of the Long QT Syndrome: Genes Causing Fainting and Sudden Death", <i>Annu. Rev. Med.</i> , 1998; 49:263-274	
		VINCENT, G.M. "Genetics and Molecular Biology of the Inherited Long QT Syndrome", <i>Annals of Medicine</i> , 1994; 26:419-425	
		WANG, D.W. et al. "Characterization of human cardiac Na <sup>+</sup> channel mutations in the congenital long QT syndrome", <i>Proc. Natl. Acad. Sci. USA</i> , Nov. 1996; 93:13200-13205	
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		WANG, Q. et al. "Positional cloning of a novel potassium channel gene: KVLQT1 mutations cause cardiac arrhythmias", <i>Nature Genetics</i> , Jan. 1996; 12:17-23	
		WANG, Q. et al. "SCN5A Mutations Associated with an Inherited Cardiac Arrhythmia, Long QT Syndrome", <i>Cell</i> , March 10, 1995; 80:805-811	
		WANG, Z. et al., "Functional Effects of Mutations in KvLQT1 that Cause Long QT Syndrome," <i>J. Cardiovasc. Electrophysiol.</i> 10(6):817-826, 1999.	
		WATTANASIRICHAIGOON, D. et al. "Sodium Channel Abnormalities are Infrequent in Patients with Long QT Syndrome: Identification of Two Novel SCN5A Mutations", <i>Am. J. Med. Genet.</i> , 1999; 86:470-476	
Examiner Signature			Date Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**



Complete if Known

Application Number	09/840,125
Filing Date	24 April 2001
First Named Inventor	Igor SPLAWSKI
Group Art Unit	1655
Examiner Name	

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		WEI, J. et al. "Congenital Long-QT Syndrome Caused by a Novel Mutation in a Conserved Acidic Domain of the Cardiac Na <sup>+</sup> Channel", <i>Circulation</i> , 1999; 99:3165-3171	
		WEI, J. et al., "Novel KCNQ1 Mutations Associated With Recessive and Dominant Congenital Long QT Syndromes: Evidence for Variable Hearing Phenotype Associated with R518X," <i>Hum. Mutat.</i> 15(4):387-388, 2000.	
		WOLLNIK, B. et al. "Pathophysiological mechanisms of dominant and recessive KVLQT1 K <sup>+</sup> channel mutations found in inherited cardiac arrhythmias", <i>Human Molecular Genetics</i> , 1997; 6(11):1943-1949	
		YAMAGISHI, H. et al., "A De Novo Missense Mutation (R1623Q) of the SCN5A Gene in a Japanese Girl With Sporadic Long QT Syndrome," <i>Hum. Mutat.</i> 11(6):481, 1998, Abstract.	
		YANG, W.-P. et al. "KvLQT1, a voltage-gated potassium channel responsible for human cardiac arrhythmias", <i>Proc. Natl. Acad. Sci. USA</i> , April 1997; 94:4017-4021	
		CHOUABE, C. et al. "Properties of KvLQT1 K <sup>+</sup> channel mutations in Romano-Ward and Jervell and Lange-Nielsen inherited cardiac arrhythmias", Accession No. AF000571; 3 pp.	
		<a href="http://www.ncbi.nlm.nih.gov">http://www.ncbi.nlm.nih.gov</a> ; GenBank Accession No. U86146; Yang, W.P. et al. "KvLQT1, a voltage-gated potassium channel responsible for human cardiac arrhythmias", 2pp.	
		<a href="http://www.ncbi.nlm.nih.gov">http://www.ncbi.nlm.nih.gov</a> ; OMIM Entry 600163; 11 pp.	
		<a href="http://www.ncbi.nlm.nih.gov">http://www.ncbi.nlm.nih.gov</a> ; OMIM Entry 192500; 27 pp.	
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